

hence at first sight it might appear that the new form was but an immature state. Mr. Chilton, however, states that he has examined altogether twenty live specimens, none of which seemed otherwise to have anything immature about them, and these were obtained at various times from January to October, 1881, he would, therefore, refer the absence of the seventh pair of appendages to an arrest of development. In some respects the new genus resembles *Paranthura* of Spence Bate. The new species is called *C. fontanus*. The Amphipods found with this Isopod are *Cragonyx compactus*, sp. nov., *Calliope subterranea*, sp. nov., and *Gammarus fragilis*, sp. nov., all without eyes. The new species are all figured, and at great length described.

GEOGRAPHICAL NOTES

MR. STANLEY has returned to Europe, after an absence of between three and four years, during most of which time he has been on the Lower Congo. From the station which he established at Vivi, below the Yellala Falls, his object was to make a road past the long line of cataracts, about 150 miles, to Stanley Pool. Much of the road has, we understand, been constructed, and five stations have been established. Mr. Stanley himself has been 300 miles into the interior, with what results to science remains to be seen. Meantime the French are diligently exploring the region lying between the Lower Congo and the Ogové, and have already done much to clear up its hydrography.

BARON NORDENSKJÖLD has under consideration an expedition to the Arctic next summer, and is engaged, in company with Mr. William Schönlanck, of Berlin, a gentleman much interested in geographical discovery, who is at present visiting Stockholm, as to the detailed arrangements of the same.

THE Swedish Geological Expedition returned from Spitzbergen to Tromsö on the yacht *Bojna* on the 16th inst. It was found impossible to land at Beeren Island, as intended, owing to tremendous seas.

WE regret to hear of the death of Mr. Krarup Smith, who has, since 1867, been Inspector of the Northern Districts in Danish Greenland. During the past winter he suffered from constant sleeplessness, and he expired somewhat suddenly on May 28, aged forty-nine. Every traveller who has passed any time at Godhavn during the last fifteen years has spoken of the kindness and attention of Mr. Smith and his wife. He rendered important services to various Arctic expeditions, and freely placed his house and resources at the disposal of scientific workers—Nares, Markham, Hayes, Pavy, Whympier, Nordenskjöld, Steenstrup, and many others of various nationalities have experienced their hospitality or received their assistance. Although Inspector Smith was not of a robust constitution, he travelled extensively by boat and sledge in summer and winter throughout the Inspectorate, which extends over more than five degrees of latitude, and took much interest in the welfare of the natives, who sustain a real loss by his lamented death.

THE range of the changes of level in the rivers of Russia in Europe has become, since 1876, the subject of accurate measurements, and M. Tillo has just published in the Russian Nautical Review (*Morskoy Sbornik*) an interesting paper on this subject, being the result of measurements made at eighty different places. The highest range is reached by the Oka at Kaluga, the difference between the highest and lowest levels being as much as 45 feet; the average range for the same river from its source to its mouth being 32.2 feet; the average for the Volga from its source to its mouth is 33.6 feet, 30.1 feet for the Kama, 25.2 for the Duna, and 23.1 for the Don. For all other rivers the range is less than 20 feet. Of course this range diminishes very much towards the mouth of each river; but still it reaches 12 feet for the Volga at Astrakhan, and 9 feet for the Duna at Riga. The highest range observed in the lakes of Northern Russia was only 2.1 feet. A map prepared by M. Tillo shows the distribution of hydro-metrical stations on Russian rivers, their numbers having been increased in 1880 to 341 stations.

WE regret to learn that the *Neptune*, which was chartered by the American Government to take supplies to the Greely Scientific Expedition, in Lady Franklin Bay, in 81° N., has returned to St. John's, Newfoundland, and reports being unable to get further north than 79° 20', owing to an impenetrable barrier of ice. She, however, landed supplies at several ports. From the precautions which have been taken there is, we believe, no

danger of the U.S. Polar observing party being in straits for want of food. The fact of the *Neptune* being unable to get north, combined with the news of the early imprisonment of Lieut. Hucgaard's expedition on the coast of Novaya Zemlya, seems to indicate an exceptionally early and severe Arctic winter.

IN the last number (fasc. 3 tome 7) of the *Bulletin* of the Antwerp Geographical Society will be found an interesting discussion on the subject of geographical orthography, and the preparation of maps generally. The president took objection to the distinction made by the Commission to consider the subject between scientific maps and maps for common use. He recognised, he said, only one kind of maps, and that was *good maps*, which indeed might be made to bring into prominence certain features for special purposes. All maps should be constructed on rigidly scientific principles, most of all those for common and school use.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE

AT King's College, London, Prof. W. Grylls Adams, F.R.S., will deliver a course of lectures on Electricity during the ensuing session. A course of practical work in electrical testing and measurement with especial reference to electrical engineering will also be carried on under his direction in the Wheatstone Laboratory. The lectures will be given once a week on Thursday, at 2 p.m., and the laboratory will be open daily (Saturday excepted) from 1 to 4.

AT Owens College Prof. Arthur Schuster, assisted by Mr. W. Haldane Gee, will give a theoretical and practical course on the modern applications of electricity one evening a week during next winter. Beginning with the ordinary electrical measurements it is intended to include the usual tests of terrestrial and submarine telegraphy, the construction of telephones, electro-dynamo machines, and all measurements connected with electric lighting.

THE Calendar of Yorkshire College for the ninth Session has just been issued. In addition to the usual information, we note that Prof. Rucker, who has secured a new assistant-lecturer in the person of Mr. C. Spurge, B.A., of Cambridge, proposes some additional work in his Senior Mathematical Class, and, what is of more importance, to add a Third Year Course in the department of Physics. The lectures and laboratories in the Chemical, Geological, and Biological departments, under Professors Thorpe, Green, and Miall respectively, as well as the classes generally, are to be continued as in last session. In the Textile Industries Department Mr. Beaumont has added a third year's course for such of his students as require it. In the Coal-Mining Department the recent alterations in the curriculum will come into full operation at the beginning of this next session. The course is in future to occupy two years, and will include lectures by the Professors of Chemistry and Geology, as well as instruction in practical coal-mining by Mr. A. Lupton. A boon to science teachers has been granted in the shape of Assisted Studentships, under which a teacher may work in the college laboratories on payment of one-fourth of the fees, Government paying the other three-fourths. We may add that the Yorkshire College has, at the present time, about 700*l.* a year to distribute in scholarships.

THE Marquess of Ripon, Viceroy of India, in a letter expressing his warm approval of the decision of the Council of the Yorkshire College, Leeds, to raise a memorial to the first president, the late Lord Cavendish, in the form of a Professorship of experimental physics, announces his intention of subscribing 500*l.* to the fund, which now amounts to 3000*l.*

FROM the Calendar of University College, Nottingham, we see that the teaching staff is well filled up, nearly all branches of a really liberal education being represented. From the interesting statistics given, it is evident that the institution is very largely taken advantage of. The Calendar gives an account of the origin of the College.

THE Winter Session of 1882-83 of the London School of Medicine for Women (30, Henrietta Street, Brunswick Square) will open Monday, October 2. Courses of lectures will be given at the school on Anatomy, Chemistry, Physiology, Practice of Medicine, and Practice of Surgery. A course of Practical Anatomy, with demonstrations, will also be held. Lectures on

Clinical Medicine and Clinical Surgery will be delivered at the Royal Free Hospital, where daily clinical instruction will be given to the students. The number of students admitted since the foundation of the school in 1874 has been 100.

THE new University at Lund was opened on the 26th inst., great preparations having been made for the ceremony. The principal universities of the continent were represented through deputations.

SOCIETIES AND ACADEMIES

SYDNEY

Linnean Society of New South Wales, July 26.—The following papers were read:—Botanical notes in Queensland, Part 3, by the Rev. J. E. Tenison-Woods, F.G.S. This paper contained the results of the author's observations on the Mulgrave River, with a list of the species collected by him in that district.—On the forage plants indigenous to New South Wales, by Dr. Woolls, F.L.S.—Description of three new fishes of Queensland, by Chas. W. De Vis, B.A. The species described by Mr. De Vis are:—1. *Oligorus Goliath*, taken in Moreton Bay, a fish of gigantic size, seven feet long, and two feet high. 2. *Synaptura Fiteroiensis* from Rockhampton; and 3. *Engraulis Carpentariae*, from the Norman River.—4. Description of a species of Squill, *Lysiosquilla Miersii*, from Moreton Bay, by Chas. W. De Vis, B.A. This Crustacean, which is found in Moreton Bay, differs materially, according to Mr. De Vis, from the two species of the same genus recorded in Mr. Haswell's Catalogue, which belong to Mr. Miers' second section of the genus, while the present species agrees with his first section.—On *Cypraea citrina* Gray, from Rowley Shoals, North West Australia, by John Brazier, C.M.Z.S.—On a variety of *Ovulum depressum*, from the Loyalty Islands, by Mr. R. C. Rossiter.—Notes on the nidification of the spoon-bill, the heron, and the night-heron, by Mr. K. H. Bennett.

VIENNA

Imperial Academy of Sciences, July 15.—L. I. Fitzinger in the chair. The following papers were read:—F. Lorber, a contribution to the determination of the constants of the polar planimeter.—Ph. Knoll, contributions to the theory of respiratory innervation (third communication).—H. Sater, contributions to the history of development of the antheridium of liver-wort.—C. Huellner, on the influence of great amplitudes on the oscillations of elastic bodies.—E. Lippmann and F. Fleissner, on Azylines, a homologous series of azotic bodies.—F. Heindachner, contributions to the knowledge of the river-fishes of South America.—C. Etti, on the combinations of vanillin with pyrogallol and phloroglucin.—L. v. Barth and I. Schreder, on the action of melting caustic potash on orein and gallic acid.—J. Habermann and M. Hoenig, on the action of cupric hydroxide on some sugar species.—M. Hoenig and F. Berger, on the action of chloroform on naphthalene in presence of aluminium chloride.—C. Nachbauer, examination of the embryos of ingermated rye, especially on their contents of diastase.—C. Zatzek, to the knowledge of bees-wax.—S. Schubert, on diisobutyl-hydroquinones and some of its derivatives.—F. Exner, on some experiments relating to the contact-theory.—L. Hartinger, on the occurrence of organic bases in the merchantable amyl alcohol.—A. Waage, on the action of ammonia on propionaldehyde.—J. Fruehling, on oxybutyric acid.—B. Brauner, on some earth contained in cerite.

PARIS

Academy of Sciences, September 18.—M. Blanchard in the chair.—The following papers were read:—Note on the life and works of M. Emile Plantamour, by M. Faye.—On marsh-fevers, by M. d'Abbadie. Immunity from such fevers in bad Ethiopian regions is often secured by sulphur-fumigations on the naked body. In Sicily the workmen in sulphur-mines on low ground suffer much less from intermittent fever than the rest of the population. In Greece (M. Fouqué has shown), a once flourishing town of 40,000 inhabitants, Zephyria, has been almost utterly depopulated through marsh fever; and its decadence has corresponded to a transference of sulphur-mining operations to the east, so that the sulphur-emanations are prevented, by a mountain mass, from reaching the site of the town; (other similar facts are given).—Geological and historical considerations on the great deserts of Africa and Asia, by M. de Tchihatcheff (Abstract of a British Association paper).—Sepa-

ration of gallium (continued), by M. Lecoq de Boisbandran.—Study on the régime of the maritime Loire, by M. Bouquet de la Grye. Between Nantes and Saint Nazaire there is deposited annually about 590,000 cubic metres of sand and mud. The volume of the channels has diminished about 56,000 cubic metres annually, for sixty years. The outer bar of the river has risen 0.70m. since 1864, and will probably rise more, presenting a danger for large vessels coming to Saint-Nazaire. The author indicates means of bringing the river back to its former constitution, such as replanting, covering slopes with turf, and he suggests a plan for carrying off quickly into the sea the 40 million cubic metres that have been deposited during the last sixty years.—On the permutation of n objects and on their classification, by M. Bourgot.—Absorption by the epidermis of aerial organs, by M. Cornu. A substance emitted in the form of vapour may traverse the epidermis (though very thick) of aerial parts of a plant, and be absorbed without previous dissolution in water. (The experimental case was that of growing grapes exposed to the vapours of heavy oils from distillation of coal tar. The empyreumatic substances were concentrated, as judged by taste, in the central part of the pulp and the bulb of the peduncle.)—The squares of forces of induction, produced by the sun in planets, and due to the velocity of revolution of these bodies, are, all other things equal, in inverse ratio of the seventh powers of the distances from the star; induction of comets, bolides, and falling stars, by M. Quet.—On a refractometer, for measuring the indices and the dispersion of solid bodies, by M. Soret. He modifies Kohlrausch's refractometer, which has the disadvantage of requiring monochromatic light, and so is unfit for researches on dispersion. A beam of parallel solar rays falls on a crystal immersed in a liquid more refringent, and of known indices; after reflection it is received on the slit of a spectro-scope. With sufficient angle of incidence, all the visible spectral rays are totally reflected, and the spectrum is very brilliant. On gradually diminishing the incidence, the different rays attain in succession their limiting angle, and reach the spectro-scope with intensity considerably lessened; thus a dark screen advances towards the violet. The line of separation in the spectrum, together with the incidence, afford data for arriving at the index.—Influence of temperature on the spectra of metalloids, by M. Van Monckhoven. He proves experimentally that the so-called high temperature spectra may be produced at very low temperatures, and *vice versa*.—On the action of presence of plates of zinc in boilers, and on a process for avoiding explosions, by M. Trève. The hydrogen liberated with galvanic action should theoretically maintain the boiling (after having started it), and so prevent explosion as a result of super-heating; for this, however, the plates must be carefully kept clean. The author thinks it well to add the continuous injection of gas (preferably carbonic acid), and so incessantly prevent the super-heating, which may be regarded as a *sheep* of the liquid.—On the winter of 1879-80, by M. Teisserenc de Bort. The exceptional cold is attributed to a displacement of the centre of high pressures of Madeira and the Azores, and to a perturbation in the barometric maximum of Siberia.—On the alteration of grape seeds by mildew, by M. Prillieux.

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